

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

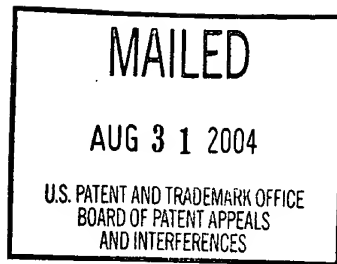
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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* CLAUDIA PANZER, HOLGER TESMANN,  
and  
ROLF WACHTER

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Appeal No. 2004-1535  
Application No. 09/830,918

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ON BRIEF

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Before WILLIAM F. SMITH, TIMM, and ADAMS, *Administrative Patent Judges*.  
TIMM, *Administrative Patent Judge*.

***DECISION ON APPEAL***

Appellants appeal from the final rejection of claims 8-27 which are all the claims pending in the application. We have jurisdiction over the appeal pursuant to 35 U.S.C. § 134.

**INTRODUCTION**

The Examiner rejects all the pending claims under 35 U.S.C. § 103(a) using three prior art references as evidence of obviousness. The references are:

Yu et al. (Yu)	5,547,988	Aug. 20, 1996
Keil et al. (Keil)	5,690,924	Nov. 25, 1997
Wachter et al. (Wachter)	WO 96/16991	Jun. 6, 1996
(International Application published under the PCT)		

The specific rejection, as stated by the Examiner, is as follows: Claims 8-27 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Wachter, Yu, and Keil (Answer, p. 3).

Because the claims stand or fall together for the purposes of this appeal, we need only consider the issues in light of a single claim. 37 CFR § 1.192(c)(7)(2003). We select claim 8. Claim 8 reads as follows:

8. A cosmetic preparation comprising:

- (a) ethanol in an amount of from 70 to 90% by weight; and
- (b) a neutralization product of a chitosan and an acid selected from the group consisting of lactic acid, pyrrolidone carboxylic acid, nicotinic acid, hydroxyisobutyric acid, hydroxyisovaleric acid and mixtures thereof, wherein the neutralization product is present in an amount of from 0.01 to 5% by weight.

Because the evidence supports a conclusion of obviousness under 35 U.S.C. § 103(a), we affirm. Our reasons follow.

**OPINION**

The claims are directed to cosmetic preparations having high ethanol content and including particular chitosan salts (specification, p. 2, ll. 8-9). The chitosan salts are the neutralization product of a chitosan and selected acids (specification, p. 3, ll. 24-29). The particular chitosan salts, according to the specification, have “greatly improved ethanol compatibility and, accordingly, now allow the production of predominantly alcohol-based formulations such as, for example, hair sprays, hair gels and deodorant formulations.” (specification, p. 2, ll. 8-11).

The Examiner’s rejection is based on the modification of any of the preparations of Wachter, Yu, and Keil with greater than disclosed concentrations of alcohol (Answer, p. 5). The central dispute in this appeal involves the question of whether it would have been obvious to one of ordinary skill in the art to have optimized the concentration of ethanol through routine optimization in any of the preparations of the three references. To simplify the issues, we focus on one of the three references, i.e., Keil, in addressing Appellants’ arguments. We note that Wachter and Yu address limitations in the dependent claims which are not at issue here as the claims stand or fall together.

The heart of the Examiner’s *prima facie* case rests on well settled law involving routine optimization of a parameter, such as concentration, in a known process or preparation. *See In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936-37 (Fed. Cir. 1990)(“The law is replete with cases in which the difference between the claimed invention and the prior art is some range

or other variable within the claims. These cases have consistently held that in such a situation, the applicant must show that the particular range is *critical*, generally by showing that the claimed range achieves unexpected results relative to the prior art range.”(citations omitted) and *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955)(Normally, it is to be expected that a change in temperature, or in concentration, or in both, would be an unpatentable modification. ... [W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.”).

Appellants have not convinced us of any reversible error in the Examiner’s fact finding or application of the law. In fact, Appellants’ interpretation of the law is incorrect as is Appellants’ application of the facts to the law.

First, Appellants argue that “obviousness arguments based upon optimization are applicable only where the claimed subject matter is encompassed by the prior art.” (Brief, p. 8). Appellants interpret this to mean that the prior art must expressly set forth a concentration range for ethanol which encompasses the claimed range of 70 to 90% (*Id.*). No such explicit range disclosure is required, a more general discussion in the reference can suffice. *See, for instance, Aller*, 220 F.2d at 456, 105 USPQ at 235 (Claimed process held obvious over prior art describing the general conditions of the claimed process wherein the only disclosure of particular temperature and concentration values was one example that specified a temperature and concentration outside the claimed ranges).

Focusing on Keil, we note that Keil describes a hair treatment composition including a chitosan salt meeting the requirements of claim 8 (Keil, col. 2, ll. 8-12) preferably prepared in aqueous or aqueous-alcoholic media or provided as a water-free preparation (Keil, col. 4, ll. 4-6). Keil further discloses using ethanol as the alcohol (Keil, col. 4, ll. 7-11). The general disclosure of Keil places no limitations on the concentration of alcohol in the preparation. Nor is there any indication that the concentration is limited to those used in the example preparations. The situation is analogous to that in *Aller* and is the type of situation in which one of ordinary skill in the art would have found it obvious to perform routine experimentation to determine the optimum or workable ranges for the concentration of the components of the formulation. *Aller*, 220 F.2d at 456, 105 USPQ at 235.

Appellants also argue that “routine optimization” requires the identification of a result-effective variable. That is true. But we cannot agree with Appellants that nothing in the cited references recognizes ethanol concentration as a result-effective variable (Brief, p. 8). Keil discusses several options for alcohol concentration including alcohol-free preparations, aqueous-alcohol mixtures and water-free preparations. Moreover, Keil exemplifies preparations with different concentrations of ethanol (Examples). One of ordinary skill in the art would have understood, from the various disclosures in Keil, that the concentration of ethanol is a result effective variable.

Appellants also state in the Brief that “[p]rior to Applicants’ invention it was unknown that such large amounts of ethanol could be used with chitosan, as the increased ethanol-

compatibility of certain chitosan salts had yet to be discovered.” (Brief, p. 9). Appellants, however, cite to no evidence in support of this statement (*Id.*).<sup>1</sup> Attorney arguments in a brief cannot take the place of evidence. *In re Lindner*, 457 F.2d 506, 508, 173 USPQ 356, 358 (CCPA 1972). Moreover, the statement in Keil that the composition can be prepared as a water-free preparation as well as an aqueous or aqueous-alcohol preparation provides evidence tending to contradict Appellants’ statement in the Brief.

The evidence supports the Examiner’s finding that optimization of the ethanol concentration would have been within the skill of one of ordinary skill in the art. Appellants have failed to convince us of any reversible error in the rejection. We conclude that the Examiner has established a *prima facie* case of obviousness with respect to the subject matter of claims 8-27.

### ***Unexpected Results***

In a case such as this in which a *prima facie* case of obviousness is established on the basis that a change of a variable, such as concentration, is within the capabilities of one of ordinary skill in the art based upon routine experimentation, the burden shifts to the applicant to

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<sup>1</sup>We are cognizant of the statement in the specification that “the disadvantage of typical commercially obtainable chitosan solutions is that their alcohol compatibility is not high enough so that they are only suitable to a limited extent for the production of sprayable cosmetic preparations of high ethanol content.” (specification, p. 1, ll. 12-14). Appellants do not cite to this portion of the specification in support of their statement in the Brief. Moreover, this portion of the specification does not provide sufficient evidence that alcohol compatibility was unknown with respect to chitosan neutralized with 2 pyrrolidon-5-carboxylic acid, the material of Kiel, it merely indicates that commercially obtainable chitosan solutions, i.e., chitosan dissolved in acids such as glycolic acid, are incompatible with high levels of ethanol (specification, p. 1, ll. 8-11).

show that what seems to have been obvious really was not. *Stratoflex Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 1538, 218 USPQ 871, 879 (Fed. Cir. 1983). This is usually done by showing that the particular values of the claimed range produce a new and unexpected result or, in other words, that the claimed range is *critical* for producing the new and unexpected result. *Woodruff*, 919 F.2d at 1578, 16 USPQ2d at 1936-37 and *Aller*, 220 F.2d at 456, 105 USPQ at 235.

Appellants reply upon evidence within the specification as evidence of unexpected results. According to Appellants, they have shown that the claimed preparations “exhibit significant improvement over the prior art in terms of flexural strength achieved when they’re applied to keratin fibers (hair setting strength). The increased ethanol compatibility of the claimed chitosan salts is surprising and unexpected (*See*, Appellants’ Spec., p. 2, lines 8-11).” (Brief, p. 9).

We cannot say that the evidence in the specification is sufficiently probative of unexpected results relative to the prior art preparation of Keil. First, Appellants rely upon a showing of an improvement in terms of flexural strength when the preparation is applied to keratin fibers. Presumably, this is a reference to the discussion on page 13 of the specification referring to a difference in flexural strength between the following two compositions:

- (1) a comparative composition: An aqueous preparation containing 0.2% by weight chitosan glycolate; and
- (2) an inventive composition: A preparation containing 0.2% by weight chitosan hydroxyisovalerate and 90% by weight ethanol.

But there are too many variables and unknowns for a proper comparison. It is not clear if the difference in results is due to the presence of ethanol, chitosan hydroxyisovalerate or a combination of the two. It is not even clear that the other unnamed components are the same. The examples must be truly comparative in order to establish that the difference between the prior art and the claim is truly the basis for the alleged unexpected result. *See In re Dunn*, 349 F.2d 433, 439, 146 USPQ 479, 483 (CCPA 1965).

Moreover, the specification does not indicate that the increase in flexural strength would have been unexpected to one of ordinary skill in the art. Again we note that attorney arguments in a brief cannot take the place of evidence. *Lindner*, 457 F.2d at 508, 173 USPQ at 358. Nor do Appellants establish a link between these results and the range of ethanol concentrations of the claim, a link required to show criticality of the range.

Nor can we say that the disclosure at page 2, lines 8-11 of the specification is probative of unexpected results. That portion of the specification indicates that "it has surprisingly been found that the special chitosan salts are distinguished by greatly improved ethanol compatibility." But this statement is made after a discussion of the low alcohol compatibility of typical commercially obtainable chitosans solutions, i.e., chitosans dissolved in cosmetically acceptable acid, preferably glycolic acid (specification, p. 1, ll. 8-15). Chitosan glycolate does not represent the closest prior art and, thus, how the results relate to the closest prior art is not clear.

Appellants argue that a comparison with the closest prior art is impossible because the invention did not exist in the prior art (Brief, p. 10). But Keil discloses generally using ethanol



and chitosan neutralized with 2-pyrrolidon-5-carboxylic acid, a chitosan salt encompassed by claim 8. Keil is representative of the closest prior art.

We also agree with the Examiner that the results are not commensurate in scope with the claims (Answer, pp. 7-8). "It is well established that the objective evidence of nonobviousness must be commensurate in scope with the claims." *In re Lindner*, 457 F.2d 506, 508, 173 USPQ 356, 358 (CCPA 1972).

After reevaluating the totality of the evidence we conclude, based upon the preponderance of the evidence, that the Appellants' claimed invention, as represented by claim 8, would have been obvious to one of ordinary skill in the art within the meaning of 35 U.S.C. § 103(a).

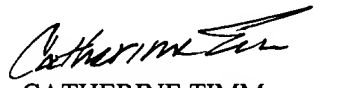
### ***CONCLUSION***


To summarize, the decision of the Examiner to reject claims 8-27 under 35 U.S.C. § 103(a) is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED

  
WILLIAM F. SMITH  
Administrative Patent Judge

  
CATHERINE TIMM  
Administrative Patent Judge

  
DONALD E. ADAMS  
Administrative Patent Judge

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